

## ABSTRACT

This invention is directed to a process for tightly binding nucleic acid to solid phase and corresponding processes for the utilization thereof. Nucleic acid is bound to solid phase matrices exhibiting sufficient hydrophilicity and electropositivity to tightly bind the nucleic acids from a sample. These processes include nucleic acid (double or single stranded DNA and RNA) capture from high volume and/or low concentration specimens, buffer changes, washes, and volume reductions, and enable the interface of solid phase bound nucleic acid with enzyme, hybridization or amplification strategies. The tightly bound nucleic acid may be used, for example, in repeated analyses to confirm results or test additional genes in both research and commercial applications. Further, a method is described for virus extraction, purification, and solid phase amplification from large volume plasma specimens.